

# What is claimed is:

- 1. A lock system comprising:
- a cylindrical door lock having a latching spindle and an opening spindle which are concentrically oriented; and
- a wireless communication system to transmit signals indicating the relative positions of the latching spindle and the opening spindle.
- 2. The lock system of claim 1, wherein the wireless communication system includes a two-way wireless communication system, wherein the cylindrical door lock can receive signals to control the position of the latching spindle relative to the opening spindle.
- 3. The lock system of claim 2, wherein the two-way wireless communication system includes a BLUETOOTH® communications protocol.
- 4. A lock system comprising:
  - a door lock incorporating a transceiver; and
- a personal, portable, two-way communication device to communicate with the door lock.
- 5. The lock system of claim 4, wherein the personal, portable, two-way communication device is adapted to control a locked state of the door lock and to receive information from the door lock.
- 6. The lock system of claim 4, wherein the personal, portable, two-way communication device includes a cellular phone.

7. The lock system of claim 4, wherein the personal, portable, two-way communication device includes a PDA.

# 8. A lock system comprising:

a door lock assembly having a lock mechanism for placing the lock assembly into an unlocked state or a locked state;

an electrically controlled actuator assembly to control the lock mechanism; a BLUETOOTH® transceiver coupled to the actuator assembly; and a communication device to communicate over a two-way wireless network with the BLUETOOTH® transceiver.

- 9. The lock system of claim 8, wherein the actuator assembly sends signals to the communication device indicating a position of the actuator assembly.
- 10. The lock system of claim 8, wherein the communication device includes a personal, portable communication device.
- 11. The lock system of claim 10, wherein the personal, portable communication device includes a cellular phone.

# 12. A lock system comprising:

an electrically controlled retrofit actuator assembly mountable on an existing cylindrical door lock of the type having an opening spindle for controlling a latch bolt of the door lock and having a latching spindle coaxial with the opening spindle which controls a lock mechanism of the door lock when rotated relative to the opening spindle, wherein the retrofit actuator assembly controls the rotation of the latching spindle relative to the opening spindle.

- 13. The lock system of claim 12, wherein the retrofit actuator assembly includes an actuating member couplable to the latching spindle and dimensioned such that the opening spindle is engageable with an inner door knob of the cylindrical door lock.
- 14. The lock system of claim 13, wherein the actuating member rotates the latching spindle relative to the opening spindle when an appropriate electronic signal is received by the actuating member, the rotation causing the lock mechanism to go into an unlocked or a locked state.
- 15. The lock system of claim 12, further comprising a position sensor for sensing a position of the latching spindle relative to the opening spindle.
- 16. The lock system of claim 15, further comprising a transceiver coupled to the position sensor for sending signals to a remote system indicating a state of the lock as indicated by the position sensor.
- 17. The lock system of claim 16, wherein the signals are transmitted via a BLUETOOTH® network.
- 18. A lock system comprising:

a retrofit actuator assembly adapted to be mounted on an existing lock to control a locking mechanism of the lock; and

a two-way communication device to control the retrofit actuator assembly and to receive signals from the retrofit actuator assembly indicating a state of the locking mechanism.

- 19. The lock system of claim 18, wherein the retrofit actuator assembly includes a first member couplable to a latching spindle of the existing lock to rotate the latching spindle in response to signals received from the two-way communication device.
- 20. The lock system of claim 18, wherein the retrofit actuator assembly is adapted to be mounted to a cylindrical door lock of the type having an outer opening spindle and an inner latching spindle which are concentrically oriented.
- 21. The lock system of claim 20, wherein the retrofit actuator assembly includes a first member coupled to the opening spindle and rotatable relative to the latching spindle and a second member coupled to the latching spindle and rotatable relative to the opening spindle, wherein when the second member rotates relative to the first member, the latching spindle rotates relative to the opening spindle.
- 22. The lock system of claim 18, wherein the two-way communication device includes a cellular phone.
- 23. The lock system of claim 18, wherein the retrofit actuator assembly is adapted to not interfere with manual control of the lock.
- 24. A lock system comprising:

a cylindrical door lock assembly incorporating a BLUETOOTH® transceiver to enable the cylindrical door lock to wirelessly communicate its locked state.

25. The lock system of claim 24, wherein the transceiver can receive signals to control the locked state of cylindrical door lock.

- 26. The lock system of claim 24, wherein the cylindrical door lock includes a latching spindle and an opening spindle in a concentric relationship, and the cylindrical door lock transmits signals indicating the position of the latching spindle relative to the opening spindle.
- 27. A method of determining a state of a door locking mechanism of the type including an outer opening spindle and an inner latching spindle which are concentrically oriented, the method comprising electrically sensing a position of the latching spindle relative to the opening spindle.
- 28. The method of claim 27, further comprising wirelessly transmitting signals representing the position to an external receiving device.
- 29. The method of claim 28, wherein wirelessly transmitting includes transmitting the signals via a BLUETOOTH® network.
- 30. The method of claim 27, wherein sensing the position includes sensing a rotational orientation of the latching spindle relative to the opening spindle.
- 31. A method of controlling a cylindrical door lock, the method comprising: sending a signal to an actuating member which is coupled to a latching spindle of the cylindrical door lock;

rotating the latching spindle relative to an opening spindle of the cylindrical door lock in response to the electronic signal, wherein the latching spindle either locks or unlocks a lock mechanism of the cylindrical door lock; and sensing a position of the actuating member.

- 32. The method of claim 31, further comprising sensing whether a door in which the cylindrical door lock is mounted in is open or closed.
- 33. The method of claim 31, further comprising wirelessly transmitting signals representing the position to an external receiving device.
- 34. The method of claim 33, wherein wirelessly transmitting includes transmitting the signals via a BLUETOOTH® network.
- 35. A retrofit assembly for a cylindrical door lock of the type having an opening spindle for controlling a latch bolt of the door lock and having a latching spindle coaxial with the opening spindle which controls a lock mechanism of the door lock when rotated relative to the opening spindle, the retrofit assembly comprising:

an electronically controllable actuating member couplable to the latching spindle and adapted to be positioned on the cylindrical door lock such that the opening spindle is engageable with an inner door knob of the cylindrical door lock;

wherein the actuating member rotates the latching spindle relative to the opening spindle when an appropriate electronic signal is received by the actuating member, the rotation causing the lock mechanism to go into an unlocked or a locked state.

36. The retrofit assembly of claim 35, wherein the actuating member includes a stator which is coupled to the opening spindle and which is rotatable relative to the latching spindle, the actuating member further includes a rotor which is coupled to the latching spindle and which is rotatable relative to the opening spindle, wherein when the rotor rotates relative to the stator, the latching spindle rotates relative to the opening spindle.

- 37. The retrofit assembly of claim 35, wherein the actuating member includes a first collar dimensioned to freely rotate around the opening spindle and a second collar which is keyed to fit around the opening spindle.
- 38. The retrofit assembly of claim 35, further comprising a position sensor for sensing a position of the actuating member.
- 39. The retrofit assembly of claim 38, further comprising a transceiver coupled to the position sensor for sending signals to a remote device indicating a state of the actuating member as indicated by the position sensor.
- 40. The retrofit assembly of claim 35, further comprising a sensor for sensing whether a door the cylindrical door lock is coupled to is open or closed.
- 41. The retrofit assembly of claim 40, further comprising a transceiver coupled to the sensor for sending signals to a remote device indicating a state of the door.
- 42. The retrofit assembly of claim 35, further comprising a transceiver for receiving signals from a remote host system and for transferring the signals to the actuating member to control the rotation of the actuating member.
- 43. The retrofit assembly of claim 35, wherein the actuating member receives electrical power only when the actuating member is rotating the latching spindle.
- 44. The retrofit assembly of claim 35, wherein the latching spindle is also rotatable by a key from one side of the door lock and rotatable by a manual locking member from a second side of the door lock.

- 45. The retrofit assembly of claim 35, wherein the actuating member includes a sleeve positioned around the latching spindle and located between the opening spindle and the latching spindle, the sleeve having an arm for driving the rotation of the sleeve.
- 46. The retrofit assembly of claim 45, wherein the actuating member includes a gear which freely rotates around the opening spindle and includes a drive pin which engages the arm of the sleeve to rotate the sleeve when the gear rotates.

# 47. A cylindrical door lock comprising:

a first handle and a second handle which are mountable on opposing sides of a door;

an opening spindle which retracts a latch bolt of the cylindrical door lock in response to a rotation of either the first handle or the second handle;

a lock mechanism attached to the opening spindle, wherein the first handle is not rotatable when the lock mechanism is in a locked state;

a latching spindle coaxial with the opening spindle and which when rotated relative to the opening spindle causes the lock mechanism to alternately go into an unlocked state or the locked state, the first handle including a keyway for inserting a key to control the latching spindle, the second handle including a manual locking member for manually controlling the latching spindle;

means for electronically controlling the rotation of the latching spindle relative to the opening spindle;

a position sensor for sensing a position of the actuating member; and means for sending signals to a remote communications device indicating a state of the actuating member as indicated by the position sensor.

- 48. The cylindrical door lock of claim 47, wherein means for electronically controlling includes an electronically controllable actuating member coupled to the latching spindle, wherein the actuating member rotates the latching spindle relative to the opening spindle when an appropriate electronic signal is received by the actuating member.
- 49. The cylindrical door lock of claim 48, wherein the electronically controllable actuating member includes a stator which is coupled to the opening spindle and which is rotatable relative to the latching spindle, the electronically controllable actuating member further includes a rotor which is coupled to the latching spindle and which is rotatable relative to the opening spindle, wherein when the rotor rotates relative to the stator, the latching spindle rotates relative to the opening spindle.
- 50. The cylindrical door lock of claim 48, wherein the electronically controllable actuating member includes a gear freely rotatable around the opening spindle, the gear for driving a sleeve coupled to the latching spindle.
- 51. The cylindrical door lock of claim 47, further comprising means for receiving signals from a remote system, the signals for controlling the rotation of the latching spindle relative to the opening spindle.
- 52. A method for retrofitting a cylindrical door lock of the type having a latching spindle which controls a lock mechanism of the cylindrical door lock when rotated relative to an opening spindle of the cylindrical door lock, the method comprising:

installing an electronically controllable actuating member on the latching spindle so that the opening spindle includes an exposed end for engaging with an inner door knob, wherein the actuating member rotates the latching spindle relative to



the opening spindle when an appropriate electronic signal is received by the actuating member which causes the lock mechanism to go into an unlocked or a locked state.

- 53. The method of claim 52, wherein installing includes slide fitting a first collar around the opening spindle, wherein the first collar includes a keyed hole dimensioned to couple the first collar with the opening spindle, wherein installing further includes slide fitting a second collar around the opening spindle, the second collar including a hole which is dimensioned so that the second collar freely rotates around the opening spindle, the second collar including an adapter member which couples with the latching spindle to rotate the latching spindle.
- 54. The method of claim 52, wherein installing includes slide fitting a sleeve around the latching spindle so that it is positioned between the latching spindle and the opening spindle.
- 55. An entry door security system comprising:

a door lock assembly for putting a door lock mechanism into an unlocked state or a locked state;

a sensor for sensing the unlocked or the locked state of the door lock mechanism;

a door entry module; and

a central control module in wireless communication with the door entry module and in wireless 2-way communication with the door lock assembly;

wherein, the central control module controls the unlocked or the locked state of the door lock assembly.



56. The entry door security system of claim 55, wherein the central control module receives signals from the door lock assembly indicating that the door lock assembly is in an unlocked or a locked state.

- 57. The entry door security system of claim 55, further comprising a second sensor for sensing whether the entry door is opened or closed, wherein the central control module receives signals indicating whether the door has been opened or closed.
- 58. The entry door security system of claim 55, further comprising an alarm coupled to the central control module, wherein the central control module is configured to disarm the alarm system before the door opens.

# 59. A lock system comprising:

a cylindrical door lock of the type having an opening spindle for controlling a latch bolt of the door lock and having a latching spindle coaxial with the opening spindle which controls a lock mechanism of the door lock when rotated relative to the opening spindle, wherein the latching spindle is rotatable by a manually operated key from a first side of the door lock and by a manual operated locking member on a second side of the door lock; and

an electrically controlled actuator assembly mountable to the cylindrical door lock to electrically control the rotation of the latching spindle relative to the opening spindle, wherein the electrically controlled actuator assembly is positioned such that it does not interfere with operation of the manually operated key or the manual operated locking member.

60. The lock system of claim 59, wherein the lock system includes a sensor to detect a rotation of the latching spindle relative to the opening spindle.

61. The lock system of claim 60, wherein the actuator assembly includes a detectable portion used by the sensor to detect movement of a portion of the actuator assembly, wherein the detectable portion moves when the actuator assembly is electrically actuated and the detectable portion moves when the door lock is operated by the key or the manual operated locking member.

# 62. A lock system comprising:

a cylindrical door lock having a latch bolt controlled by a rotation of an opening spindle; and

an electrically controllable actuator to control the rotation of the opening spindle.

- 63. The lock system of claim 62, further comprising a sensor to sense the position of the actuator.
- 64. The lock system of claim 62, wherein the cylindrical door lock includes a latching spindle located concentric and coaxial to the opening spindle wherein the latching spindle controls a lock mechanism of the door lock when rotated relative to the opening spindle, wherein the electrically controllable actuator also controls a rotation of the latching spindle relative to the opening spindle.
- 65. A retrofit assembly for a cylindrical door lock having an opening spindle which rotates to control a latch bolt of the door lock, the retrofit assembly comprising:

an electronically controllable actuating member couplable to the opening spindle, wherein the actuating member rotates the opening spindle when an appropriate electronic signal is received by the actuating member.

- 66. The retrofit assembly of claim 65, wherein the actuating member is dimensioned to be positioned on the cylindrical door lock such that the opening spindle is engageable with an inner door knob of the cylindrical door lock.
- 67. The retrofit assembly of claim 65, wherein the actuating member is coupled to a latching spindle of the door lock to control a rotation of the latching spindle relative to the opening spindle.
- 68. A lock system comprising: an electrically controllable lock having a transceiver connected to the lock; and

a two-way communication device to communicate bidirectionally with the transceiver, wherein the two-way communication device is adapted to also communicate over a two-way network to a remote device.

- 69. The lock system of claim 68, wherein the two-way network is a wireless network.
- 70. The lock system of claim 68, wherein the two-way network is an internet network.
- 71. The lock system of claim 68, wherein the two-way communication device and the transceiver communicate via a BLUETOOTH® communications protocol.
- 72. The lock system of claim 68, wherein the two-way communication device includes a cellular phone.

- 73. The lock system of claim 68, wherein the two-way communication device includes a central host system.
- 74. The lock system of claim 68, wherein the two-way communication device communicates to the remote device via a modem.
- 75. A lock system comprising:
  an electrically controllable lock having a transceiver connected to the lock;
  and

a short-range two-way communication device to communicate bidirectionally with the transceiver, wherein the two-way communication device is adapted to also communicate over a long-range two-way network to a remote device.